AREA and PERIMETER

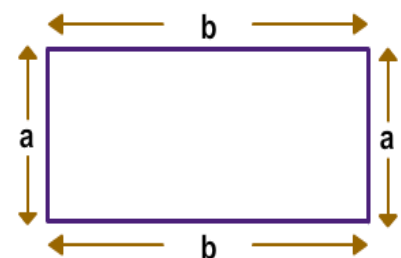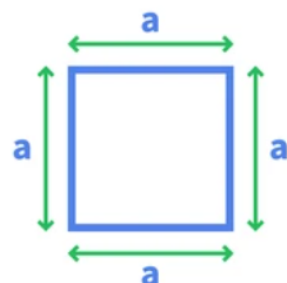**Year 5 KNOWLEDGE ORGANISER**

Love of Learning

Overview

In our unit on area and perimeter we will learn:

-Measure Perimeter   -Perimeter on a Grid

-Perimeter of a Rectangle   -Perimeter of Rectilinear Shapes

-Calculate Perimeter   -Counting Squares

-Area of Rectangles   -Area of Compound/ Irregular Shapes.

<u>This learning is important because</u> it helps us to understand and measure the size of things in the world around us.

It helps us to grasp ideas such as where things will fit, what size items are in comparison to one another and distances that need to be travelled.

Perimeter

-Perimeter is the distance around the outside of a shape.

-For the <u>perimeter of a rectangle</u>, we calculate: (l + w) x 2.

-e.g. the perimeter of this rectangle is (5cm+2cm) x 2 = 14cm.

-For the perimeter of regular shapes, we measure the length (l) and count the number of sides (s). Perimeter = l x s.

-e.g. the perimeter of this pentagon is 4cm x 5 = 20cm.

-For the perimeter of irregular shapes we simply add the length of sides together. e.g. 1cm + 1cm + 4cm + 1cm + 5cm + 2cm = 14cm.

-The perimeter of rectilinear shapes with missing sides can be calculated by using the opposite sides for reference. A = 3cm + 1cm = 4cm. Total perimeter = 4cm + 2cm + 1cm + 1cm + 3cm + 1cm = 12cm.
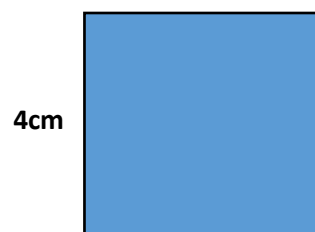
Areas of Squares and Rectangles

-Area is the term used to describe the amount of space taken up by a 2D shape or surface.
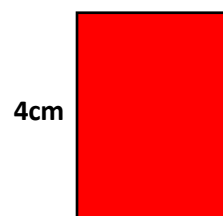
-Area is measured in square units - cm², m² or km².

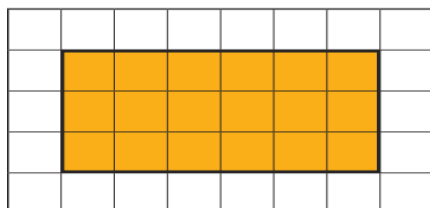-We calculate area by multiplying the length of a shape by its width.

SQUARE

All sides on a square are the same length. So, the area is 4cm x 4cm = 16cm²

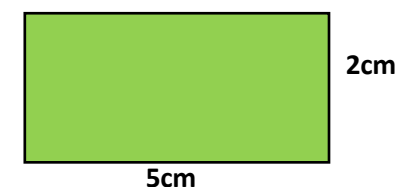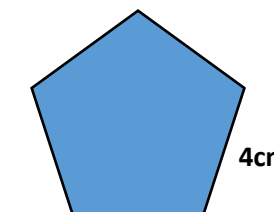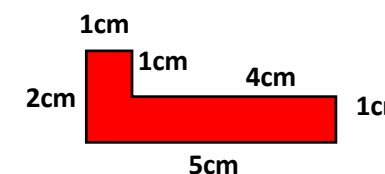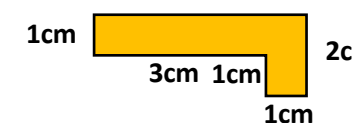The length is 4cm. The width is 2cm. So, the area is 4cm x 2cm = 8cm²

We can calculate the area of a rectangle on a grid. E.g. this rectangle is 6 squares x 3 squares = 18 squares.
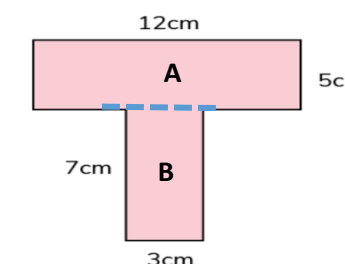
Areas of Compound and Irregular Shapes

-To find the area of compound shapes, we divide the shape into rectangles with known lengths and widths.

-E.g. area of rectangle A = 12cm x 5cm = 60cm²

-Area of rectangle B = 7cm x 3cm = 21cm²
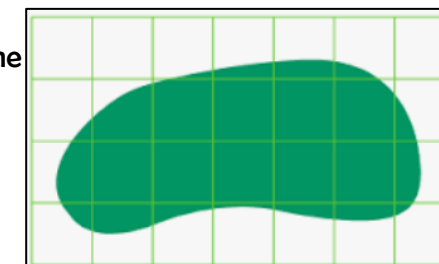
-60cm² + 21cm² = 81cm²

-We can estimate the area of irregular shapes on grids by adding the number of whole squares to half the part squares.

E.g. Whole squares = 7   Part squares = 18

-Estimate = 7cm (whole squares) + 9cm (half part squares) = 16cm²

Key Vocabulary

| Length | Height | Width | Perimeter | Equivalent | Rectangle | Rectilinear | Kilometre (km) | Metre (m) | Dimensions |